

REMARKS

In the Office Action, claim 1 was objected to because of informalities. Claims 1-8 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 4-8 were rejected under 35 U.S.C. §102(b) as being anticipated by either Wrightman (U.S. Pat. No. 4,938,263) or Hurn (U.S. Pat. No. 3,833,033). Claims 1 and 4-8 were rejected under 35 U.S.C. §102(e) as being anticipated by Wolf et al. (U.S. Pat. No. 6,213,176). Claim 2 was rejected under 35 U.S.C. §103(a) as being unpatentable over either Wrightman or Hurn or Wolf et al. in view of Vartiainen (U.S. Pat. No. 4,441,537). Claim 3 was rejected under 35 U.S.C. §103(a) as being unpatentable over either Wrightman or Hurn or Wolf et al. in view of Kennedy et al. (U.S. Pat. No. 6,039,097).

In response to the informalities noted by the Examiner, claims 2 and 6-8 have been canceled and claims 1 and 3-5 have been amended.

Claim 1 has been amended to have a positioning system for each conveying system in the feeding region and the discharge region in order to exactly position (index) and move the wooden workpiece during machining with respect to a tool also movable in several axes. By the first positioning system, at the feeding region, a second workpiece can already be automatically fed and positioned while the first

workpiece is still being machined and automatically positioned by the second positioning system with respect to the tool during machining. Accordingly, it is possible to carry out complex machining operations along the longitudinal extension of the workpiece during its transport or movement.

Also, the kind of transport of the workpiece by the second conveying system is an important difference with respect to the prior art. According to the invention, the workpiece will be safely connected with the conveying system by a coupling unit in order to safely avoid a mismatch of the position of the workpiece with respect to the conveying system. Such a mismatch, for example, produced by a slippage between the conveying system and the workpiece, would influence the machining accuracy. According to the invention, such a slippage can be avoided by the tongs-like gripper of the coupling unit of the second conveying system.

The feature of the measuring equipment for each positioning system has been added to claim 1 in the feeding and discharge region. With the measuring equipment, the position of the workpiece with respect to the tool can be exactly indicated which makes it possible to produce a variety of complex cutouts during the transport of the workpiece. In contrast to the prior art, the workpiece will not be fixed at a stationary clamping station before machining but will be moved during machining. The positioning systems with the cooperating measuring equipment provide a suitable

controlled overlapping of the speed components in advance of the respective first and second conveying system and the controlled feed motion of the tool. The movement of the wooden workpiece and the movement of the tool in several axes can be exactly coordinated and controlled. The combination of two independently working feed systems (NC-controlled driven feed rollers at the feeding region and a servo-driven gripper system at the discharge region) creates an automatic positioning system built for extremely fast processing times without any set-up or adjustments required.

U.S. Pat. No. 4,938,263 (Wrightman) relates to a machine for cutting logs to provide a dovetail log joint. The machine includes a log guide 16 which serves to guide and convey logs 18 into, through and away from the log cutting station 14. The guide 16 includes a bottom wall 20, a back wall 22 and rollers 24 to facilitate the movement of the log 18 along the guide 16. The log 18 is clamped against the back wall 22 by means of a clamping plate 35 during machining by any one of the tenons 110a to 110d. In other words, the log 18 will be fixed during machining. With the guide 22 and the rollers 24, an automatic and controlled positioning of the workpiece with respect to the tools and a relative movement of the workpiece with respect to the tools also during machining is not possible.

U.S. Pat. No. 3,833,033 (Hurn) is concerned with a method of and an apparatus for performing a succession of working operations at pre-selected locations along the

length of an elongated workpiece. On the upstream side of a datum position there is located a drive roller and on the downstream side of the datum position there is located a working station. The workpiece is held against the drive roller and then said drive roller is rotated through a succession of rotary movements, with the drive roller being stationary between movements for predetermined intervals. During each movement, the drive roller is rotated through a predetermined amount. The workpiece is thereby advanced in successive steps through said working station and successive pre-selected locations longitudinally of the workpiece are brought opposite the working tool, and held stationary for predetermined time intervals between the periods of movement. A second drive roller is located on the downstream side of the work station which is driven in synchronism with the upstream drive roller. Working operations, however, are only performed when the workpiece is stationary (see Abstract). This feed and transport concept is completely different and does not provide any hint to a system in which an automatic and controlled feed of the workpiece and the tool is possible during machining. Since the timber length 1 will be pressed against the conveyor rollers 2 by the drive roller 4, a slip would occur between the timber length 1 and the drive roller 4 in case of a machining during the conveying of the workpiece.

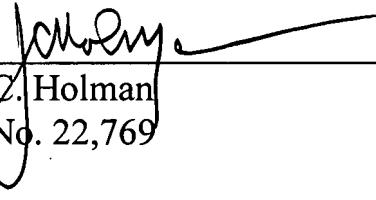
Enclosed with this Amendment is a brochure which shows an example of Applicant's speed cutting machine.

Based on the foregoing amendments and remarks, it is respectfully submitted that the claims in the present application, as they now stand, patentably distinguish over the references cited and applied by the Examiner and are, therefore, in condition for allowance. A Notice of Allowance is in order, and such favorable action and reconsideration are respectfully requested.

However, if after reviewing the above amendments and remarks, the Examiner has any questions or comments, he is cordially invited to contact the undersigned attorneys.

Respectfully submitted,

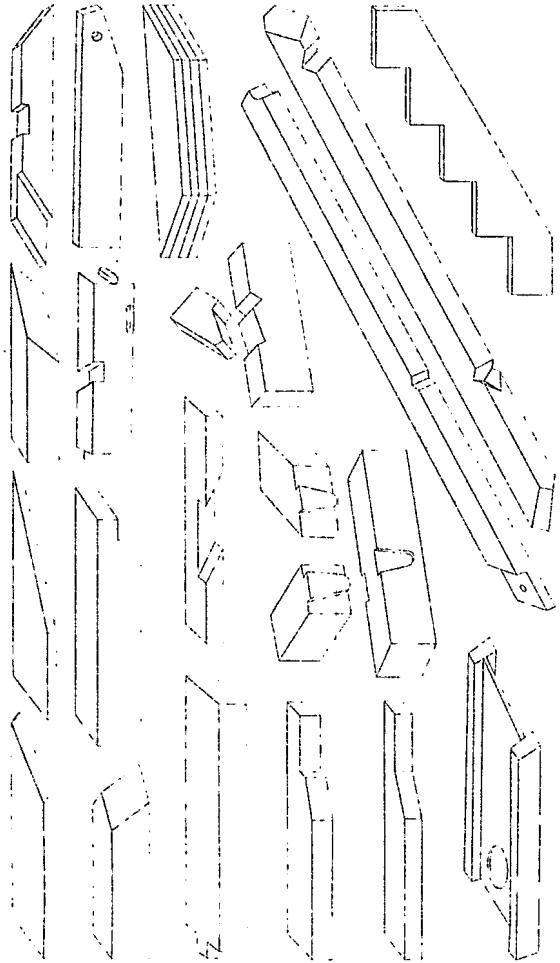
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JCH/JLS/crj

Hundegger SC2 Machine

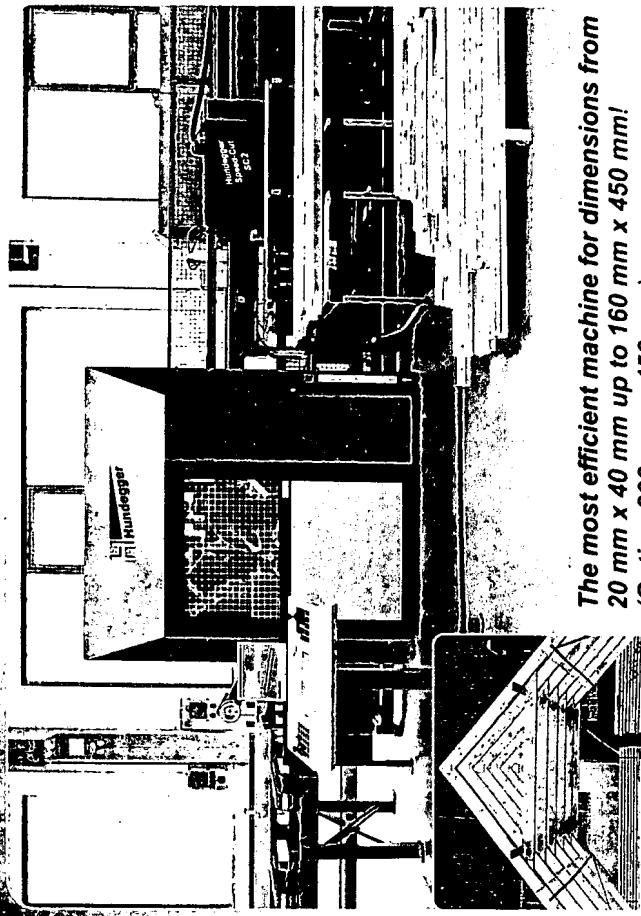
33 Quickly cuts-to-length at any angle and can perform a variety of other operations as well (optional).



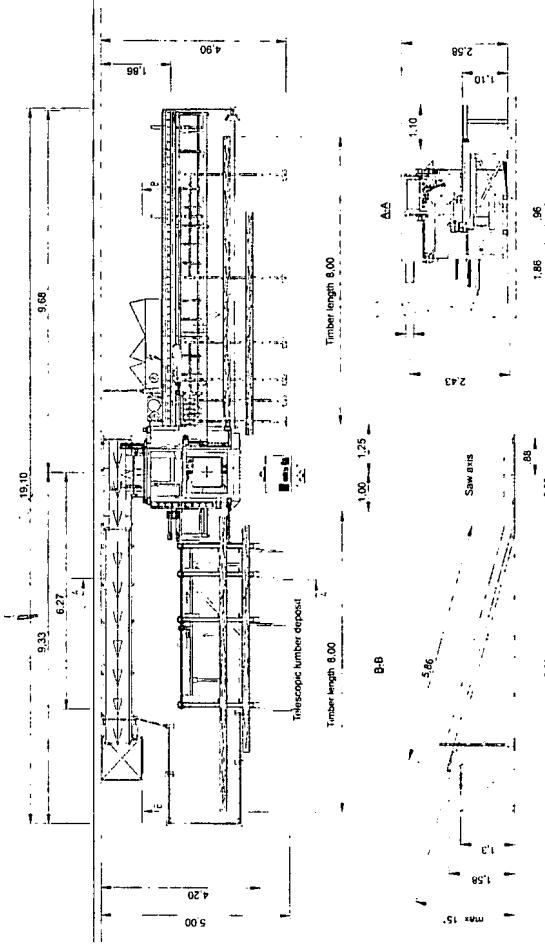
Hundegger

Hundegg.

Speed-Cut-Milling
Computerized Cutting -
Drilling - Milling - Slotting - Marking and more



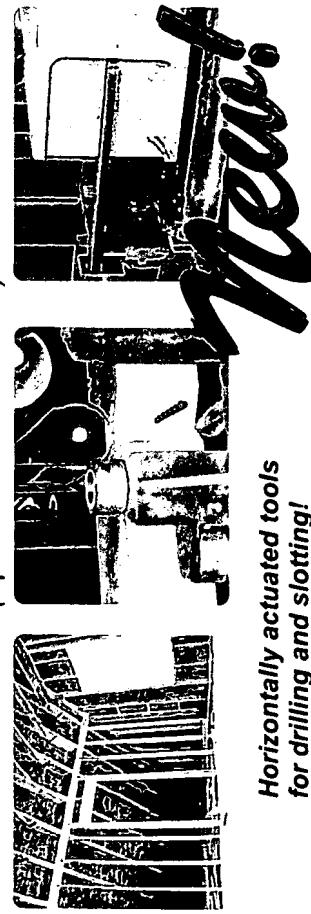
The Hundegger SC2 machine can be configured and built to your current needs, and then expanded upon at any time to meet your growing manufacturing needs.



**Hans Hundegger
Maschinenbau GmbH
Kemptener Str. 1
D-87749 Hawangen**

SC2-6ng-300407

Horizontally actuated tools for drilling and slotting!



Hundegger

SC-1

The machine has been designed to process dimensions from 20 x 40 mm (1½" x 1½") to 150 x 450 mm (6" x 17½") (Option 200 x 450 mm) in any length and has a positioning accuracy of +/- 0.5 mm.

The Hundegger SC-1 is equipped with a unique combination Feed/Clamping lumber transport system that is unrivaled, providing both speed and precision. The combination of two independently working feed systems - feed rollers and a servo-driven gripper wagon - creates a positioning system built for extremely fast processing times without any set-up or adjustments required.

The Hundegger SC-1 is fully automated and requires only one operator to load lumber onto the automatic in-feed conveyor and unload parts from the out-feed deck.

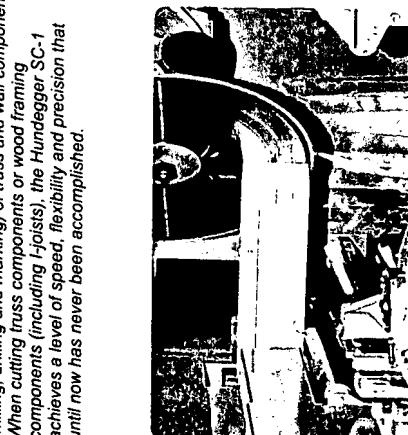


A new revolving mill unit with up to 4 unique tool positions was developed to perform joinery and special cuts like bird mouths and seat cuts.

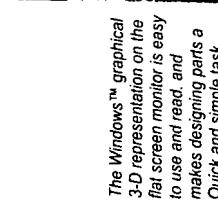
The Hundegger SC-1 machine was primarily developed for the quick and precise cutting and processing (milling, drilling and marking) of truss and wall components. When cutting truss components or wood framing components (including joists), the Hundegger SC-1 achieves a level of speed, flexibility and precision that until now has never been accomplished.



The job files can be programmed with Hundegger's easy-to-use Single Piece Construction Program (SPCP™) or transferred from any standard CAD-program, including Robbins®, MiTek® or Alpine® and KeyMark® software.



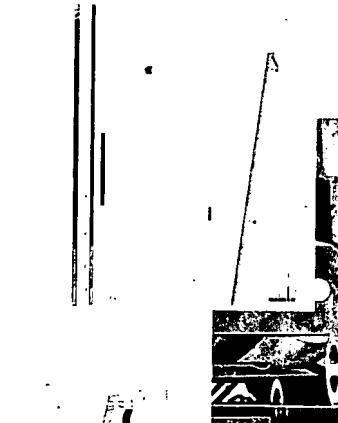
Any type of part can be efficiently processed from any size and length of lumber including EWP. By using Hundegger optimization program, same angle parts can be grouped together for faster production and less waste. Even our standard machine is capable of securely transporting and accurately cutting stacked lumber.



The optional vertical mill unit, can be fit with a variety of different mills and can be used to produce dadoes, vent holes and corbeils, etc... Drill units, which can also be added at any time, can accurately drill through-holes as well as blind-holes.



The horizontal drill can perform through or blind drillings. A rafter drilling is shown here. The slot cutter can be outfitted with a variety of different chain widths. In addition to through slots, blind slots are also possible for such applications as a base for a post.



The optional printer unit can be used to create layout lines and can be used to label parts with text. Text heights range from one or up to four lines. The optional marker can be used to put layout lines on parts.

- Dimensions from 20 x 40 to 160 x 450 mm
- Option 200 x 450 mm
- Any timber length!
- Automatic loading
- Automatic lumber discharge
- Single-Piece-Construction Program ®
- Simple interface
- Easily upgradeable at any time!

